



Product Highlights

- Native TDM and Ethernet (up to 16 E1s/T1s)
- 100 Mbps net throughput
- Superior spectral efficiency @ 20 MHz
- Long range: up to 120 Km/75 miles
- Single radio supporting multiple bands (2.4 and 4.8 – 6.1 GHz)
- Advanced MIMO and OFDM technologies
- Built-in mechanisms to mitigate interference
- Monitored Hot Standby 1+1 support

RADWIN 2000 Radio Series

Carrier-Class, High-Capacity Sub-6 GHz Backhaul Solutions

RADWIN 2000 is the solution of choice for operators that require carrier-grade, affordable backhaul solutions. Providing 100 Mbps net throughput with long range of up to 120 Km/ 75 miles, the RADWIN 2000 wireless broadband solutions allow operators to boost capacity to meet the ever-growing demand for broadband and expand their networks rapidly and cost-effectively.

Packing native TDM and Ethernet over a single wireless link, RADWIN 2000 radios incorporate advanced technologies such as MIMO and OFDM to ensure unmatched robustness and resiliency in operation in the sub-6 GHz bands. All radios comply with worldwide regulations and standards and are installed by Tier-1 carriers and service providers around the globe.

RADWIN 2000

High-Capacity Sub-6 GHz Backhaul Solutions

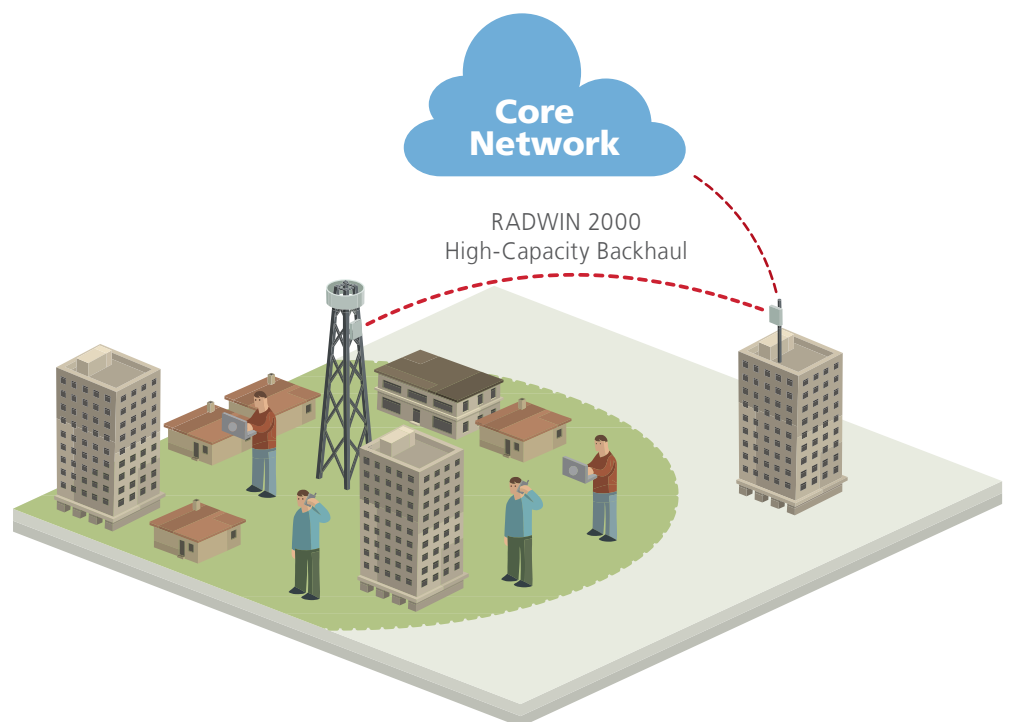
Key Benefits

- Flexible combination of E1s/T1s and Ethernet over a single wireless link
- High capacity and long range to meet today's and tomorrow's backhaul requirements
- Enabling seamless migration from TDM to IP
- Easy to install, simple to maintain
- Built-in advanced technologies: OFDM, MIMO, Diversity
- Significant reduction in cost of ownership (lower CAPEX and OPEX)

RADWIN 2000 provides a flexible combination of native TDM and Ethernet (up to 16 E1s/T1s), preparing operators for seamless migration from TDM to IP and enabling them to offer both voice and data services to their customers. Delivering multiple frequencies over a single platform, the RADWIN 2000 multi-band radio ensures utmost transmission resiliency and field flexibility.

Built on RADWIN's proprietary air interface, coupled with advanced built-in OFDM, MIMO and Diversity technologies, RADWIN 2000 delivers optimal performance and unequaled robustness in sub-6 GHz bands. The high-capacity solution can be deployed in various topologies including point-to-point, cascading, multiple point-to-point, mesh and ring, and supports collocation with other RADWIN radios utilizing RADWIN's unique Hub Site Synchronization (HSS) functionality.

Built for carrier-grade networks, RADWIN 2000 is available with Monitored Hot Standby 1+1 support. In this mode, a secondary link is used to back up the primary link in case of an equipment failure or loss of air interface, thus ensuring maximum service availability.



RADWIN 2000 offers TDM and IP backhaul over a single wireless link

RADWIN 2000 Specifications

Typical Applications

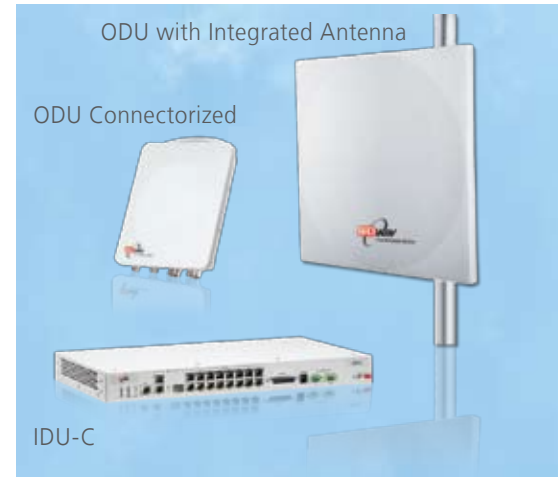
If you need a product that delivers more – more capacity, extended range, carrier-class performance and enhanced flexibility - RADWIN 2000 is the right solution for you.

RADWIN 2000 is ideally suited for a range of applications including Cellular Backhaul, backhaul for IP and WiMAX networks, and broadband wireless connectivity for large corporations and private networks demanding high capacity.

Configuration								
Architecture	ODU: Outdoor Unit with Integrated Antenna or Connectorized Unit for External Antenna IDU: Indoor Unit or PoE device							
IDU to ODU Interface	Outdoor CAT-5e cable							
Radio								
Capacity	100 Mbps net throughput (50 Mbps full-duplex)							
Range	Up to 120 km/75 miles							
Frequency Bands	Multi-band radio supporting 2.412 - 2.462 GHz and 4.800 - 6.080 GHz							
Channel Bandwidth	20 MHz							
Tx Power	Max: 26 dBm Dynamic range: 35 dBm, configurable by RADWIN Manager							
Adaptive Modulation & Coding	Supported							
Automatic Channel Selection	Supported							
Antenna Diversity	Space and Polarization							
Duplex Technology	TDD							
Error Correction	FEC k = 1/2, 2/3, 3/4, 5/6							
Encryption	AES 128							
Hub Site Synchronization (HSS)	Up to 16 collocated links							
Radio Parameters								
Modulation	2x2 MIMO, OFDM							
	BPSK		QPSK		16QAM		64QAM	
FEC Rate	1/2	1/2	3/4	1/2	3/4	2/3	3/4	5/6
Maximum Air Rate [Mbps]	13	26	39	52	78	104	117	130
Sensitivity (dBm) @BER <10e-11 (20MHz)	-88	-86	-83	-81	-80	-72	-70	-67
TDM Interface								
Number of Ports	Up to 16							
Type	E1/T1 configurable by RADWIN Manger							
Framing	Unframed (transparent)							
Timing	Independent timing per port, Tx and Rx							
Connector	RJ-45							
Standards Compliance	ITU-T G.703, G.826							
Line Code	E1: HDB3 @ 2.048 Mbps, T1: B8ZS/AMI @ 1.544 Mbps							
Latency	Configurable: 5-20 msec (default: 8msec)							
Impedance	E1: 120Ω, balanced T1: 100Ω, balanced							
Jitter & Wander	According to ITU-T G.823, G.824							
Monitored Hot Standby 1+1	Supported							
Ethernet Interface								
Ethernet Ports	2 in IDU-C; 1 in PoE device 10/100BaseT with Auto-Negotiation (IEEE 802.3u) Framing/Coding IEEE 802.3							
SFP Port	Supported in IDU (type FE)							
VLAN Support	VLAN transparent; Separate VLANs for service traffic and Management traffic							
Information Rate	Configurable in steps of 1Kbps							
Connector	RJ-45							
Maximum Frame Size	2048 Bytes							
Latency	3 msec (typical)							
Impedance	100Ω							

RADWIN 2000 Specifications

Management	
Link Management Application	RADWIN Manager
Protocol	SNMP and Telnet
NMS Application	RNMS (RADWIN NMS)
Mechanical	
Dimensions	ODU with Integrated Antenna: 37.1(w) x 37.1(h) x 10.0(d) cm; 3.5 kg / 7 lbs ODU Connectorized: 19.0(w) x 27.0(h) x 7.0(d) cm; 1.8 kg / 3.6 lbs IDU-C: 43.6(w) x 4.4(h) x 21(d) cm; 1.5 kg / 3.3 lbs
Power	
Power Feeding	-20 to -60 VDC (dual connectors feed) Optional AC/DC adaptor
Power Consumption	< 35 W (IDU+ODU)
Environmental	
Operating Temperatures	ODU: -35°C to 60°C / -31°F to 140°F IDU: 0°C to 50°C / 32°F to 122°F
Humidity	ODU: 100% condensing, IP67 (totally protected against dust and immersion up to 1m) IDU-C: 90% non-condensing
Radio Regulations	
FCC	47CFR, Part 15 Subparts C&E; Part 90 Subpart Y
IC (Canada)	RSS-210, RSS-111
ETSI	EN 300 328; EN 301 893; EN 302 502
WPC (India)	GSR-38
MII (China)	5.8 GHz Band Regulation
Safety	
FCC/IC (cTUVus)	UL 60950-1, CAN/CSA 60950-1 C22.2
ETSI	EN/IEC 60950-1; CE
EMC	
FCC	CFR47 Class B, Part15, Subpart B (2007)
ETSI	EN 300 386 (2005), EN 301 489-1 (2003), EN 301 489-4 (2002)
CAN/CSA-CEI/IEC	CISPR 22-04 Class B
AS/NZS	CISPR 22-2004 Class B



RADWIN is a member of the WiMAX Forum.

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